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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,224

09/18/2006

Jens Wolber

3833

9934

278

7590

10/14/2009

MICHAEL J. STRIKER
103 EAST NECK ROAD
HUNTINGTON, NY 11743

EXAMINER

MCCALL, ERIC SCOTT

ART UNIT

PAPER NUMBER

2855

NOTIFICATION DATE

DELIVERY MODE

10/14/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

striker@strikerlaw.com

Office Action Summary	Application No. 10/593,224	Applicant(s) WOLBER ET AL.	
	Examiner Eric S. McCall	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

METHOD AND DEVICE FOR
MONITORING A FUEL INJECTION DEVICE FOR
AN INTERNAL COMBUSTION ENGINE

NON-FINAL OFFICE ACTION

This action is in response to the Applicant's Request for Continued Examination dated July 29, 2009.

CLAIMS

35 U.S.C. § 112

(First Paragraph)

In response to the Applicant's remarks, the rejection of claims 1-4, 7, and 8 under 35 U.S.C. 112, first paragraph, as set forth in the previous office action of March 30, 2009 has been withdrawn.

Art Unit: 2855

(Second Paragraph)

In response to the Applicant's remarks and amendments, the rejection of claims 1-4, 7, and 8 under 35 U.S.C. 112, second paragraph, as set forth in the previous office action of March 30, 2009 has been overcome.

35 U.S.C. § 102

In response to the Applicant's amendments, the rejection of claims 1, 2, 7, and 8 under 35 U.S.C. 102(e) over Tsujimura et al. as set forth in the previous office action of March 30, 2009 has been overcome.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujimura et al. (7,243,532).

With respect to amended independent claims 1 and 7, Tsujimura et al. set forth a method, and corresponding device, for monitoring an injection device for an internal combustion engine, comprising the following steps:

monitoring by a misfire detection of a cylinder of the internal combustion engine for misfiring (Fig. 2);

detecting a mechanical malfunction (which is *at least one of* a mechanical malfunction and an electrical malfunction as claimed) of an injection device by evaluating signals of the misfire detection (ie. comparing actual fuel injection quantity of suspected misfiring cylinder to average fuel injection quantity to all cylinders; see abstract);

implementing as a response a limp-home mode (111 of Fig. 2; which is *one of* a check for electrical faults of an output stage and a limp-home mode depending on the malfunction that was detected as claimed);

detecting a malfunction of the injection device when a misfiring cylinder is detected (see above); and

detecting an electrical malfunction of the injection device *if* cylinders assigned to the output stage of the injection device misfire (The Examiner notes that because of the use of the word “if”, the detection of an electrical malfunction is not required, and thus, need not be taught by the prior art).

Tsujimura et al. set forth a fuel pressure sensor (24) that will continuously measure the fuel pressure and thus indicate a malfunction when a misfiring cylinder is detected.

Tsujimura et al. fail to explicitly set forth that the malfunction is that of a mechanical malfunction of the injection device as claimed.

However, it would have been obvious to one having ordinary skill in the art armed with said teaching to use the fuel pressure sensor (24) to indicate a mechanical malfunction in the injection device.

The motivation being that the fuel pressure sensor (24) is located in the fuel rail as are the fuel injectors. Thus, a sensed fuel pressure variation is the direct result of mechanical fuel injector operation, for a any change in the sensed fuel pressure will be indicative of the mechanical operation of the fuel injector.

The Applicant has amended independent claims 1 and 7 by adding the limitations regarding the detection of a mechanical malfunction and the detection of an electrical malfunction. The detection of the mechanical malfunction parallels that of the detection of the malfunction by Tsujimura et al. previously set forth. The detection of the electrical malfunction as set forth by the Applicant is not required by the claim due to the Applicant's use of the word "if" in the phrase "if cylinders assigned to the output stage of the injection device misfire".

With respect to claim 2, Tsujimura et al. set forth that by evaluating a fuel pressure (24), a check is carried out to determine whether there is a malfunction of the injection device.

With respect to claim 3, Tsujimura et al. set forth a fuel pressure sensor (24) that will continuously measure the fuel pressure and thus, under 35 USC 103, will indicate a mechanical malfunction when the fuel pressure drops below a threshold value.

With respect to claim 4, the use of the word “if” (line 2) sets forth subject matter that is not required by claim and thus not required by the prior art.

With respect to claim 8, Tsujimura et al. set forth the method of claim 1 being carried out by the ECU (40) of the engine and thus a computer program product with program code that is stored on a machine-readable data storage device as claimed.

Response to Arguments

The Applicant’s arguments have been considered but have not been found to be persuasive.

In fact, the Applicant’s arguments support the Examiner position that the prior art of Tsujimura et al. suggests the detection of a mechanical malfunction of the injection device when a misfiring cylinder is detected. The Applicant states that “the reference of Tsujimura et al. shows a method for *monitoring an injection device* of an internal combustion engine” and that “if a misfire is detected, the *air/fuel ratio is altered*”. Thus, the altering of the air/fuel ratio is interpreted as being a mechanical malfunction as claimed.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric S. McCall whose telephone number is (571) 272-2183.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Eric S. McCall/
Primary Examiner
Art Unit 2855